# Installation and Operating Instructions

REICH

Manoeuvre your caravan **SAFELY** & **EASILY** at the touch of a button!

## REMOTE CONTROL TRAILER MOVER

Coast to Coast
CARAVAN & LEISURE

# Reich ECO Caravan Movers:

Enables users to move their caravan via remote control to hitch, de-hitch or park the caravan into a tight spot. This takes the stress out of these highly demanding manoeuvres and minimizes the potential risk of damage to the caravan.

The Single axle Reich ECO Mover has two powerful hi-torque 12V electric motors, a 12V electronic control unit and a remote control handset and installation hardware. The motors attach to the chassis via means of a bracket and work through a direct drive reduction gearbox, which is connected to special grooved alloy anodized rollers that drive the wheels on the caravan, to provide precise control over any movements.

The Twin 4 wheel drive configuration is able of moving a caravan up to 3 tonne on a flat surface. Note: that the Twin 4WD Mover can result in some reduction in maneuverability upwards of 2.5 tonnes.

Both the Single axle and the Twin 4 wheel drive Movers are covered by a 2 year parts warranty from the date of sale. *(Please keep your receipt in a safe place.)*

## Single Axle Caravans:

The Reich ECO Mover is available for caravans up to 2 tonne. This unit has the widest rollers of all other movers on the market covering all off road tyres and is the only mover with the motors away from the tyres.

## Dual Axle Caravans:

The Reich ECO Twin 4WD Mover is available for caravans up to 3 tonne. This unit has the widest rollers of all other movers on the market covering all off road tyres and is the only mover with the motors away from the tyres.

## Remote Control Unit:

- Powered by 2 - AA Batteries.
- Activated by double pressing the power button and once activated the LED light will glow red.
- The left forward and right reverse or right forward and left reverse buttons can be pressed at the same time to rotate the Caravan on its axis, on the single axle unit.
- The remote of the Twin axle caravan states Twin 4WD and the left forward and right reverse or right forward and left reverse buttons can be pressed at the same time to move the Caravan 30% on the inside wheels and 100% on the outside wheels, thus taking all stress away from the chassis.
- For safety the remote of both the Single axle and Twin 4WD axle will switch off automatically if not used after 20 seconds.

## Base Station Units:

For a Single axle Caravan and fitted either horizontally or vertically and in close proximity to the battery, the Base Station receives the signal from the remote handset while walking around the Caravan and modulates the control of the motors.

The Base Station top shows an LED light and a reset button as well as a female plug for plug-in lead to the handset control for emergency control, in case of the batteries being flat or radio interference. The top should be accessed if the need arises to synchronise the remote with the Base Station.

For a Twin 4WD axle Caravan and fitted in close proximity to the battery, the Base Station is a Master and Slave unit, connected by a cable which receives the signal from the remote handset while walking around the Caravan and modulates the control of all four motors.

The Master & Slave unit top show an LED light and reset buttons as well as a female plug for plug-in lead to the handset control for emergency control, in case of the batteries being flat or radio interference. The Slave unit is connected by a short cable to the Master unit. The tops of the Base Station should be able to be accessed if the need arises to synchronise the remote with the Base Station.

**Reset Button:** for use when replacing or synchronising a hand remote control unit.

**Automatic Testing:** The user will hear a distinct click when the unit is powered up on both a single axle and Twin 4WD unit.

**Safety Features:** The ECU will switch off automatically if no button on the remote is pressed within 20 seconds, should an overload occur, the electronic relays will switch the Base Station off.

Reich ECO Movers are fully compliant with the electrical safety and legal standards required for Australia and New Zealand markets.

## Direct Drive Gearboxes:

The Reich ECO Movers are equipped with sealed compact direct drive gearboxes, compared to many rival units using chain driven designs.

Direct drive gearboxes use less power, produce less noise and enjoy a longer life than chain driven units.

The gearboxes are housed in a sealed waterproof unit for longer life and are maintenance free.

## Alloy Friction Rollers:

The Reich ECO Movers are equipped with lightweight anodized alloy rollers, which act upon the tyres to move the Caravan.
The ECO mover rollers incorporate a patented, channel-cut design with a 2 year guarantee and use a micro adjust wind-on engagement system, by using a manual method or power tool or an optional motor drive. The cross actuation enables the mover to be engaged to the wheels from either side at the same time.

## Reich Eco Movers Specs:

The Reich ECO Movers are constructed using high tensile steel components. The Single axle unit is suitable for up to 2 tonne Caravans and the Twin 4WD unit for up to 3 tonne Caravans.

The Single axle unit is supplied with 2 x 12V electrically powered motor units and the Twin 4WD unit requires 4 x 12V motor units.

| | |
|---|---|
| **Current** | **12 Volt DC (Single Axle)**<br>**12 Volt DC (Twin 4WD)** |
| **Consumption** | **Min – 15 Amps (Single Axle)**<br>**Max – 60 Amps (Single Axle)**<br><br>**Min – 25 Amps (Twin 4WD)**<br>**Max – 90 Amps (Twin 4WD)** |
| **Power Supply** | **12 Volt 75AH minimum (Single Axle)**<br>**12 Volt 110AH minimum (Twin 4WD)** |
| **Speed** | **1 km/hr** |
| **Weight (includes fitting)** | **33Kg (Single axle)**<br>**66Kg (Twin 4WD)** |
| **Safe Working Load** | **Up to 2000Kg (Single axle)**<br>**Up to 3000Kg (Twin 4WD)** |
| **Minimum width** | **1800mm** |
| **Maximum width** | **2500mm** |

## Cross Actuation:

The Single axle and the Twin 4WD units are supplied with a cross-actuation device that enables both rollers to be engaged on either side of the Caravan simultaneously. Once this is engaged, the operator is able to move the Caravan in any direction.

## Engaging of Rollers:

The Single axle and the Twin 4WD units use a ‘wind on’ method to move the rollers onto the tyres. The advantages of the ‘wind on’ method is that allows the operator to adjust the pressure of the rollers on the tyres relative to the pressure in the tyres or the amount of friction required to move the Caravan. The benefit of this is that it can be useful where manoeuvring the caravan up gradients and for heavier Caravans.

## Operation:

The Single axle and the Twin 4WD are water resistant and to a certain extent waterproof, however they must not be operated when submerged.

## Auto Engage Unit:

The Single axle and the Twin 4WD units can be fitted with an optional electric engagement system, which engages the rollers onto the tyres with the push of a button, eliminating any human error. It is fitted to the cross actuation system and engages all rollers. (Optional extra, this item is not supplied in a standard kit.)

# Reich ECO Remote Caravan Movers – Features

## Features and Benefits:

- TUV Approved as well as C-Tick Approved in Australia.
- Reich has more than 12 years “mover experience” and the ECO has been around for 12 years as well.
- Corrosive resistant materials, zinc-plated and powder coated for complete corrosion resistance.
- Best features ensure the units can safely move a Single axle Caravan of up to 1200kg in weight on gradients of up to 25% (1:4) and will cope with more weight where using a Twin 4WD unit with 4 motors. This will handle a 2000kg Caravan 15% (1:7).
- Direct drive fully sealed waterproof gearboxes.
- Alloy anodized rollers for superior grip and durability, which are superior to rollers used on other manufacturers’ models.
- Cross actuation allows both rollers to be engaged or disengaged simultaneously.
- The Reich ECO Movers are the only movers that have the motors and gearboxes well out of the way from the tyres, dirt and rocks.
- Heavy duty design suitable for Australian Single and Twin 4WD axle caravans.
- Using German technology and are fully imported with full backup parts warranty for 2 years here in Australia and New Zealand.
- Transferrable to new or upgraded caravans.

## Safety Features:

- Isolation switch is fitted to Caravan to prevent accidental use of the remote.
- Unique button switch, which must be pressed twice in quick succession on handset to prevent accidental activation.
- The unit will shut down automatically over 20 seconds of not pressing any buttons.
- The Base Station uses solid-state relays for long life.
- On the Single axle unit, a 100amp fuse is put between battery positive terminal and Isolation switch. On the Twin 4WD unit a 150amp fuse is put between battery positive terminal and Isolation switch.
- Built in motor overload protection (current and temperature).
- Automatically stops any movement immediately the remote buttons are released. (Please refer to above gradients)
- Softstart and Softstop electronics facilitate precise movement and greater control on most ground – millimetre by millimetre – as well as quick and easy hitching and de-hitching of your Caravan.
- The electronic control minimizes chassis stress to protect the structure of your Caravan.

## Below you will find some testimonials from customers:

Thank you for supplying a replacement Move Control Remote Hand piece at no charge. It was very generous of you. My wife and I didn't realise how dependent we had become on the Move Control until we couldn't use it. Getting our van up & down our driveway and in & out of our garage is not an easy task when you have to do it manually. I found the website you spoke of and have downloaded all the brochures and the Down Under video to my laptop. We will show it to people on our travels who show interest. So far the Move Control has caused quite a stir when we have arrived and left caravan parks. Other campers come over and ask how can the van be moving by it self, and some seem quite interested in finding out more about the product. We are going on a two week trip at the end of the month to Sydney, Mudgee, Armidale & home, hopefully I can drum up some customers for you.
Regards,
**Bob & Chris Penn Byron Bay 2481 NSW**

I have just purchased a Reich mover for a new Roadstar caravan. I am 70 years of age and the fitting of this device became a necessity rather than a luxury. With a difficult access to my driveway and a moderate slope I would not have been able to garage the caravan at home if I had to maneuver the van any other way. It also permits me to hitch the van unaided maneuvering the tow hitch directly above the tow ball with no physical effort and without tedious maneuvering of the towing vehicle. I found John Hendriks to be efficient, punctual and trustworthy. He has a cheerful personality and nothing is too much trouble. There were some minor adjustments to be done and these were completed promptly at no extra expense.
**John Taylor Lithgow NSW**

I wish to record my thanks and appreciation for having the opportunity of being the recipient of a "Reich Caravan Mover" recently installed to my "Windsor Caravan". Prior to having this wonderful piece of equipment, my wife and I did not use our van as much as we should or wanted, primarily because of the difficulty we had with the access to our property. As an eighty three year old I now find the maneuvering of the van into difficult positions child's play. Friends and neighbors watch with envy the ease with which we are able to move, hitch and unhitch our rig. I only regret not knowing of the system earlier. The professional way John Hendriks installed and explained all details of the correct operation of the unit must also be acknowledged. Thanks a lot John. I highly recommend you and the equipment unreservedly.
**Ken Hamilton Constitution Hill N.S.W.**

We have had a Reich mover fitted to our 505 single axle Coromal back in August 09. The cost was almost $4500. This may not seem a lot, but we use our van every 2nd week end. You may think this to be rather expensive but you have to consider why we got it. Our storage site at home took some 20 to 30 minutes to get the van in and out plus some pushing and pulling. To change our yard to allow a simple back up and drive out would have cost some $3000 in concrete, removal and replacement of gardens and then our yard would have been very open to the public. Now we have a van that we can get out & away in 3 minutes, plus no matter how crowded a park is when we arrive, we can be on site very quickly. The people who stand around to see how long you take and give all types of advice now stand and are amazed. The unit does handle rises well and has no problem on grass. All I have read tells me to use a solid jockey wheel as a pneumatic wheel may have the tyre stripped off the rim because of the sudden turns.
**Brian & Kerry 505 Coromal & 2007 Falcon dual fuel**

## Package Contents => MC – Economy Single

1x RH

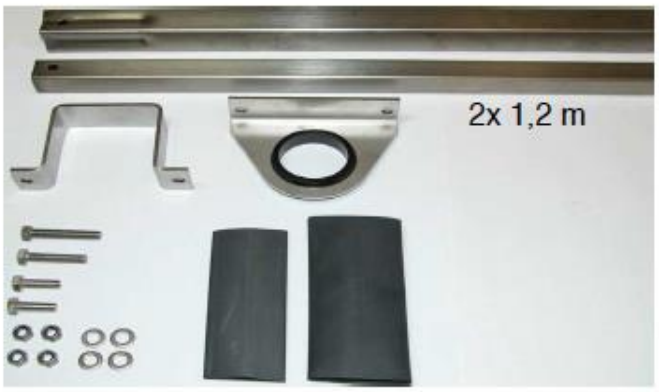
1x On/Off Isolation Switch

1 x Hand remote control

1x Strip Fuse 100A

1x LH

1x Base Station (BS) + Antenna




1x Set **Cross actuation bar**

6 mm² + 10 mm²

1x Cable-Set

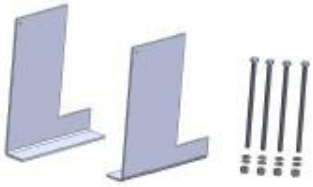
1x Pair

2x

2x

227-1330

1 Pair Mounting **brackets**



4x

2x

2x

1x 527-0010

1x Torsion bar

1x

# Package Contents => MC – Economy Twin 4wd

2 x LH

1x On/Off Isolation Switch

1x Hand remote control

1x Strip Fuse 150A

2 x RH

1x Base Station (BS) Master + Antenna
1x Base Station (BS) Slave + Cable

2 x Set **Cross actuation**

6 mm² + 10 mm² + 16 mm²

1x Cable-Set Twin

227-1330

## 2 Pair Mounting Brackets

**2x Pairs**

4 x

4 x

8 x

4x

4x

1x 527-0010

2x **Torsion bar**

2 x

# Before starting installation under the caravan:

Do check that the caravan is disconnected from the battery supply, and also from the mains 240V supply.

Do only use the supplied adaptors and accessories that are supplied or recommended by the manufacturer.

Do check that the tyres are in good condition, or replace as necessary to manufacturers specifications.

Do check tyre inflation, it must meet manufacturers recommended inflation pressure.

Do STOP immediately if you are in doubt and consult your selling dealer.

Do make sure that the chassis is in good condition with no damage and free of rust and cracks.

Do NOT remove, change or alter parts of chassis, suspension, brakes, axles or other components without prior consent from the manufacturer of your caravan.

## Installation guidelines

The chassis mounting brackets provided are suitable for fitment onto most standard caravans. The mounting brackets provided are used on Australian box chassis but are not required when installing the Reich ECO mover to a European chassis, as they will have an “L” shape chassis rail, or a “U” shape chassis rail. In this type of installation you will only require the clamping brackets.

- Ensure caravan is level in relation to ground
- Ensure hand brake is on, before starting any work
- Ensure you have disconnected the battery
- Ensure you have disconnected the caravan from mains 240V power
- Ensure caravan stabilizers are in position and supporting the caravan
- Ensure you have chocked the tyres to prevent the caravan from accidentally moving
- Ensure the area around you is safe and free of hazards
- Ensure the area where you intend to install the mounting brackets that hold the Reich ECO mover is structurally sound and free of rust and cracks
- Ensure the caravan is ready for installation, all safety guidelines are been followed and all the important areas do not cause any obstruction to the installation of the mover
- Ensure you have all the components upon unpacking the Reich ECO mover
- Ensure when you unpack the mover that both rollers are fully retracted. (You should not be able to see the green tabs, please see Diagram “H”)
- Establish the correct positioning for the mounting brackets to the chassis, see Diagram “A” (You will find more detailed information in the “Installation section”)

# Installation process of Reich ECO Movers

**Please read this page first to establish installation position**

The information below will determine if the Reich ECO Mover can be installed to your caravan.

Familiarize yourself with the picture in Diagram ”A”, it will help you determine if the mover can be installed on your caravan.

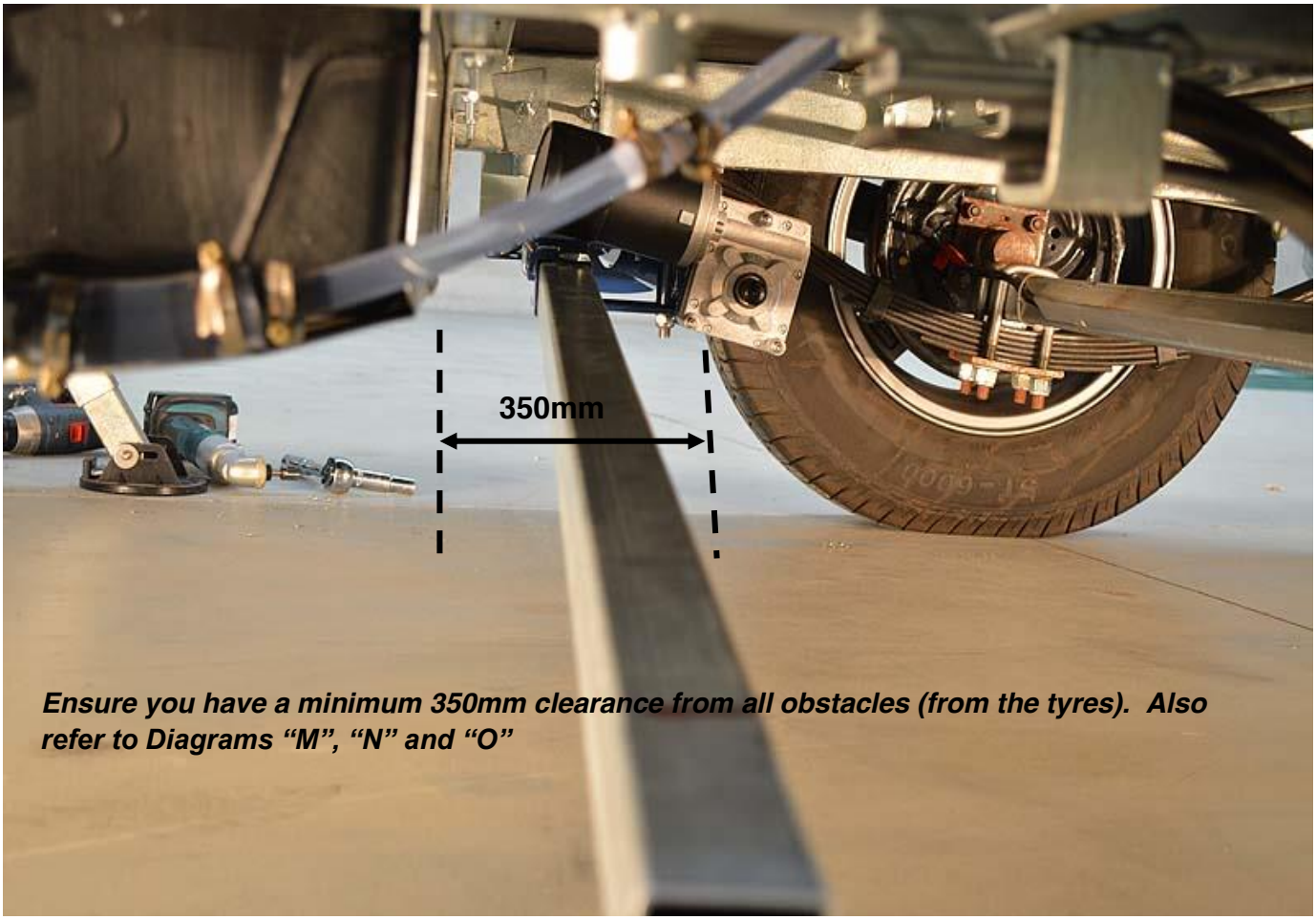
The Reich ECO Mover for a single axle caravan can be installed at the front of the wheels or at the rear of the wheels, but whenever possible, front of axle installations are preferred.

On a single axle caravan, if you are installing the Reich ECO mover in front of the axle you must have a clearance of 350mm from the front of the tyres all the way across the other side of the caravan.

On a single axle caravan, if you are installing the Reich ECO mover behind the axle you must have a clearance of 350mm from the rear of the tyres all the way across the other side of the caravan.

On a twin axle caravan, you must have a 350mm clearance in front of the tyres, and in behind the tyres.

On some caravans, some items may have to be relocated to obtain the space required to perform an installation, items such as water tanks, water hoses, steps, gas hoses, electrical wiring, mud flaps.




***Ensure you have a minimum 350mm clearance from all obstacles (from the tyres). Also refer to Diagrams “M”, “N” and “O”***

# Brief overview of installation process

We assume at this point that you have checked your caravan's clearances, and it has been determined that you can install the Reich ECO Mover.

The caravan needs to be parked on a clean, level and safe surface.

Ensure that the tyres are in good condition and inflated to the manufacturers recommended specifications.

Check that the chassis is not damaged and free from rust and cracks, taking special note of the area where the Reich ECO mover will be installed.

The measurements in Diagram "A" must be taken while the caravan is loaded under normal conditions, as when you load the caravan it will alter the space in measurement "B" in Diagram "A". (This is critical)

The measurement from the road or surface you are working on, to the centre of the caravan wheel and the roller of the Reich ECO mover must be the same, or extremely close, please see measurement "A" in Diagram "A".

The measurement at "B" in Diagram "A" represents the clearance tolerance required between the surface of the caravan tyre and the roller of the Reich ECO mover. (Also refer to Diagram "L")

For a Reich ECO mover installed on the front of a single axle caravan having a spring suspension held in place at the front by an eye bolt, the measurement required at "B" in Diagram "A" is 15mm

For a Reich ECO mover installed on the rear of a single axle caravan having a slipper spring suspension, the measurement required at "B" in Diagram "A" is 20mm

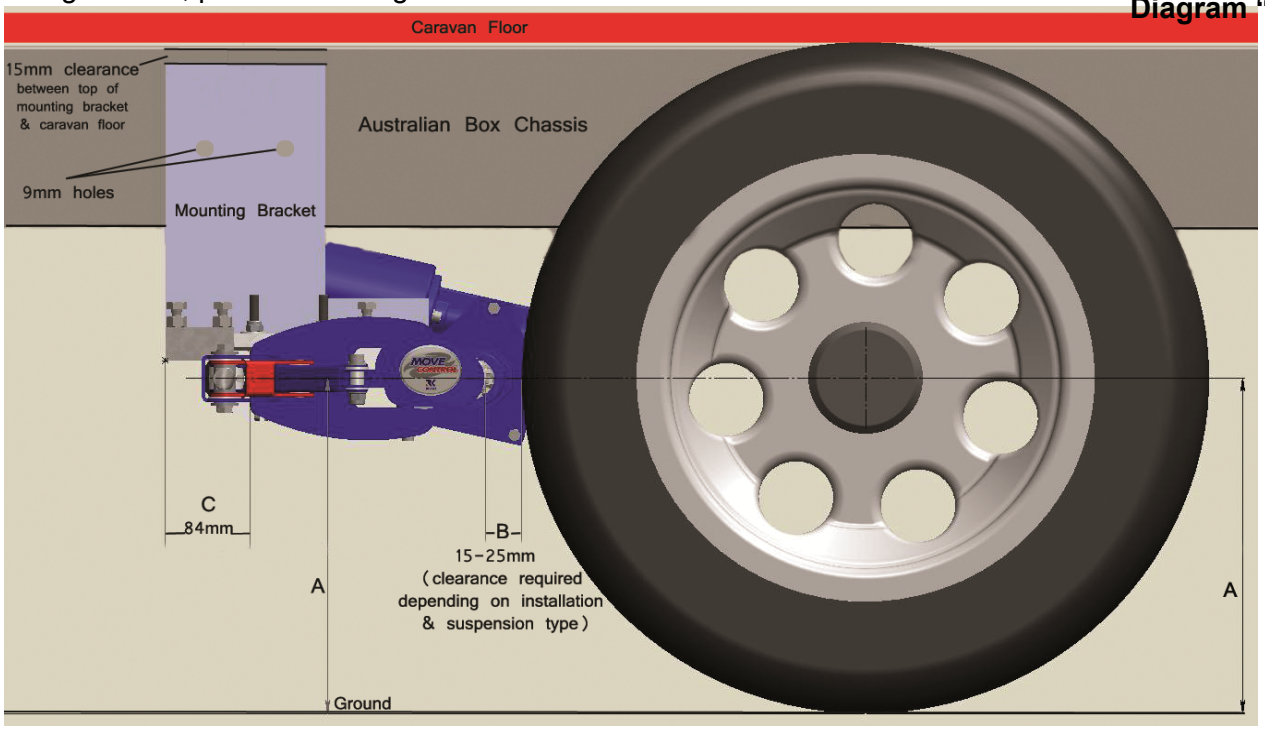
For a Reich ECO mover installed on the rear of a single axle caravan having a spring suspension with shackle plates, the measurement required at "B" in Diagram "A" is 25mm

On a twin axle caravan, the measurement required at "B" in Diagram "A" is 20mm

Please note, if you have an independent suspension, please consult your selling dealer.

The measurement "C" in Diagram "A" is 84mm, it is the measurement between the edge of the mounting bracket and the side tube of the mover assembly; you will require this space to install the stop blocks on the mounting bracket, please see Diagram "D".

**Diagram "A"**



# Installation & Mechanical Section

The caravan should be on a hard level surface.

Make sure the area where you intend to fit the mounting brackets that hold the ECO mover on the chassis is clean and structurally sound.

Make sure the caravan is ready for installation, by checking before installation that the important areas are clear of all possible obstructions such as steps, water tanks, mud flaps, electrical wiring, water hoses, gas lines, etc. etc. (Please relocate as necessary and keep in mind you require 350mm clearance from the tyres).

Make sure that when you unpack the caravan mover that both rollers are fully wound back, in the retracted position. (Please see diagram “H”).

Please place the LH mover assembly into position by using the measurements overview given in diagram “A”, and also ensuring that the assembly is in alignment to the tyre as shown in diagram “E”. The edge of the tyre must be in line with the edge of the alloy roller. The assembly can be held temporarily into position by using a floor jack or other suitable means (e.g. blocks of wood)

Please ensure that the centre of the caravan wheel is aligned with the centre of the assembly roller, both should have the same measurement from the ground to their respective centres. (Dimension “A” in diagram “A”). (E.g. Measurement from the ground to centre of wheel is XYZ, and then the measurement from the ground to the centre of the assembly roller must be XYZ).

At this stage, ensure you have the correct clearance between the assembly roller and the caravan tyre, taking note of the different clearances required depending on the type of installation you are performing and the type of suspension that you have.

Single installation of mover assembly to the front of wheels has a clearance of 15mm.

Single installation of mover assembly to the rear of wheels with slipper springs installation has a clearance of 20mm.

Single installation of mover assembly to the rear of wheels with shackle mounted springs has a clearance of 25mm.

You are now ready to establish the correct positioning of the mounting brackets to the chassis, please see diagram “A”. You should be able to measure the distance from the top of the assembly (Please see diagram “B” for top of mover assembly reference point) to the underline of the caravan floor. Once you have this measurement, you are now able to cut the mounting bracket to size, but please keep in mind that you should cut an additional 15mm for clearance under the floor. (The top of the mounting bracket must not touch the floor of the caravan; it must be at least 15mm away).

Once the mounting bracket has been cut, please double check that the mover assembly has not moved from its position and the clearances have not changed.

Please clamp the mounting bracket to the chassis, ensuring that you have 15mm clearance under the floor, and that you have a space of 84mm from the edge of the mounting bracket to the side of the mover assembly. (Please see measurement “C” in diagram “A” and reference points in Diagram “D”, remember you need 84mm for stop block installation).

Please drill two 9mm holes in the centre of the chassis rail and through the mounting brackets, and tighten to 40Nm. (Please use bolts, nuts and washers provided in the kit). Refer to Diagram “C”.

# Installation & Mechanical Section (Continued…)

Loosely assemble the LH (Left hand) mover assembly onto the mounting bracket as per diagram “B”; please tighten u bolts to about 80% as you must leave tolerance for final adjustment.

Please slide torsion bar into LH mover assembly; ensuring 7mm hex bolts on mover assembly are loose to allow torsion bar to slide in all the way to the stop. (Please refer to Diagram “G”)

Please remove jack or other suitable means (Blocks of wood) that were temporarily holding up the LH mover assembly and now place under the torsion bar on the opposite side.

Slide the RH mover assembly onto the torsion bar until it reaches the internal stop. (Please ensure that the 7mm hex bolts are loose)

Ensure that the RH mover assembly is level by measuring from the ground to the centre of the roller and the ground to the centre of the wheel as per measurement “A” in diagram “A”

Ensure you have the distance required between tyre and roller as you had in LH mover assembly, as the next step will be to measure the distance between side wall of tyre and the end of the roller to achieve the ideal alignment as per Diagram “E” and establish the length of torsion bar that requires to be cut. (Please see diagram “H”)

Remove RH mover assembly and please cut torsion bar according to the measurement just acquired between edge of tyre and end of roller. (Please note some caravans have a wide wheelbase and will not require any cutting to the torsion bar)

Once you have cut the torsion bar, you can now slide the RH mover assembly back on the torsion bar and realign as you did on the LH mover assembly, making sure of all the required measurements in Diagram “A”

You are now able to install the mounting bracket to the chassis rail by repeating the same procedure you used earlier on the LH mover assembly.

Ensure both RH and LH mover assembly are in position with the correct tolerances between rollers and tyres, and begin to tighten U Bolts nuts to 30Nm, followed by Hex bolts in diagram “G” to 15Nm, and install stop blocks as per diagram “B” and tighten to 30Nm. Please ensure to tighten lock nuts on both Hex bolts and Stop bolts.

Please install the cross actuation centre bracket to the centre of the torsion bar. (Diagram “J”)

Connect the cross actuation bar to the LH & RH mover assembly and heat shrink the plastic sleeve over the joint. (Diagram “J” & “K”)

# Assembly of ECO Mover to Caravan

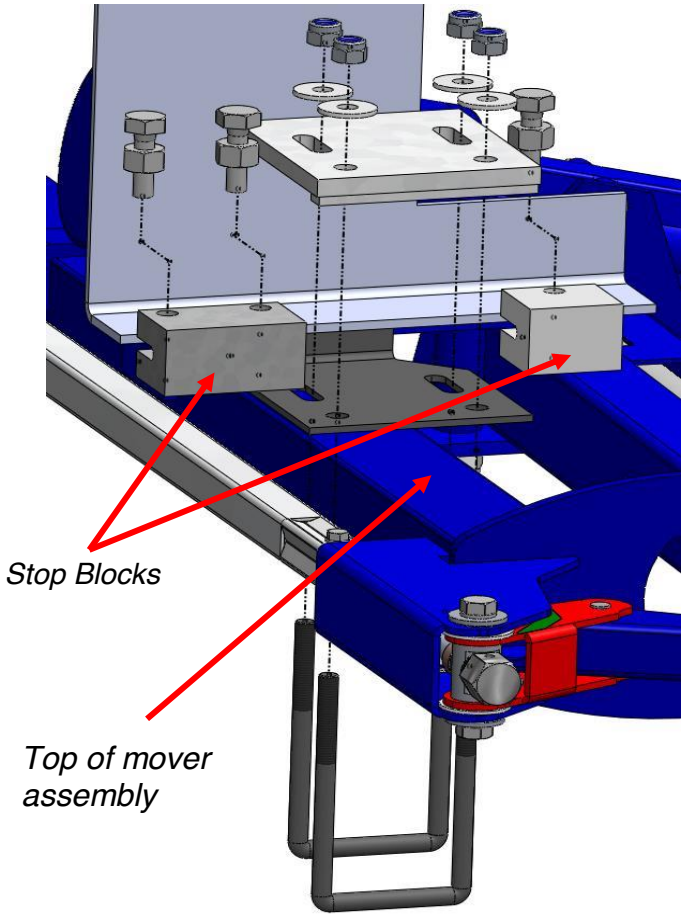



**Diagram "B"**

**Assembly of mover to mounting bracket**

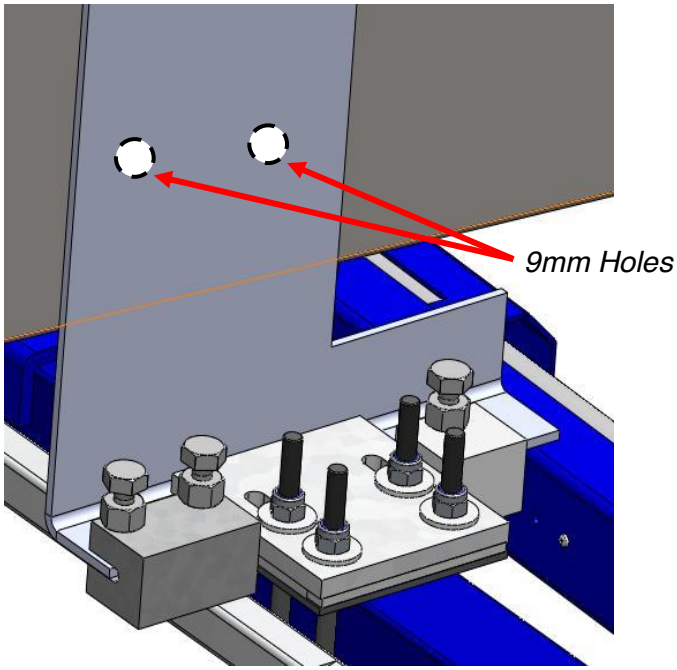



**Diagram "C"**

**Completed assembly of mover to mounting bracket**

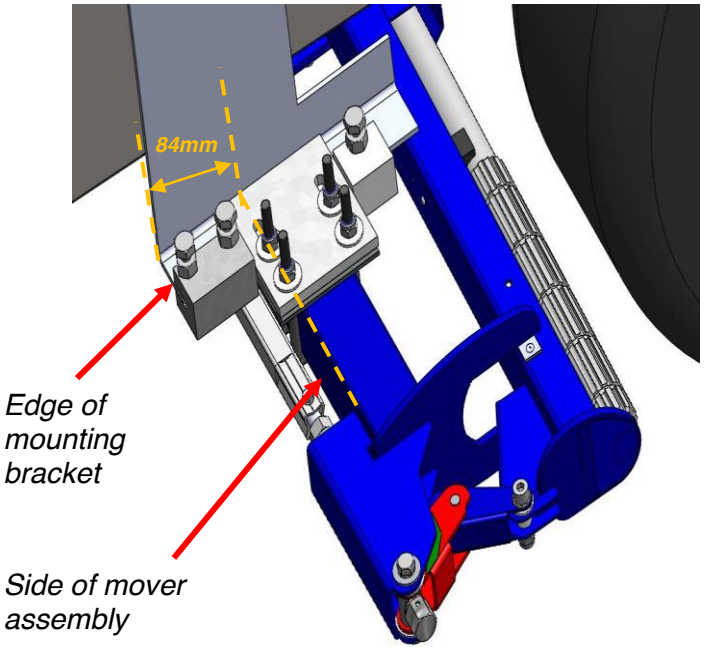



**Diagram "D"**

**Side View**

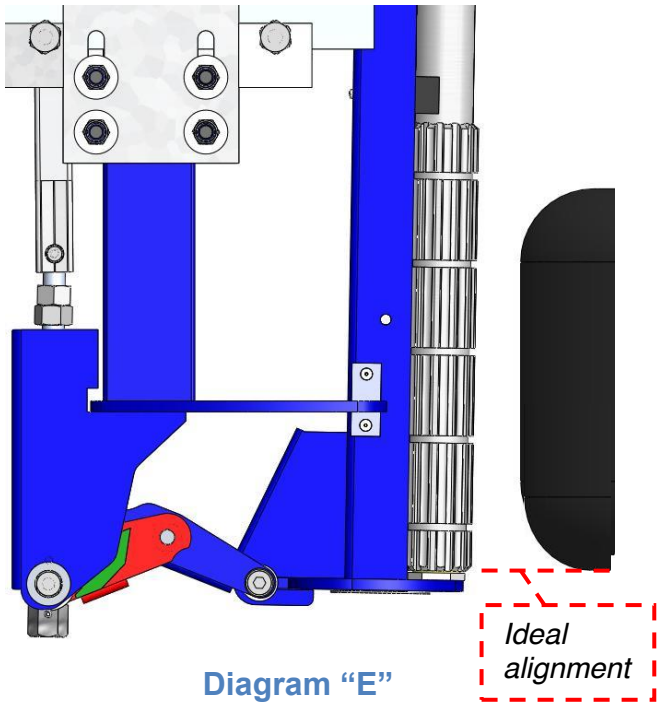



**Diagram "E"**

**Top View**

Refer to recommendations for spacing measurements

# Assembly of ECO Mover to Caravan

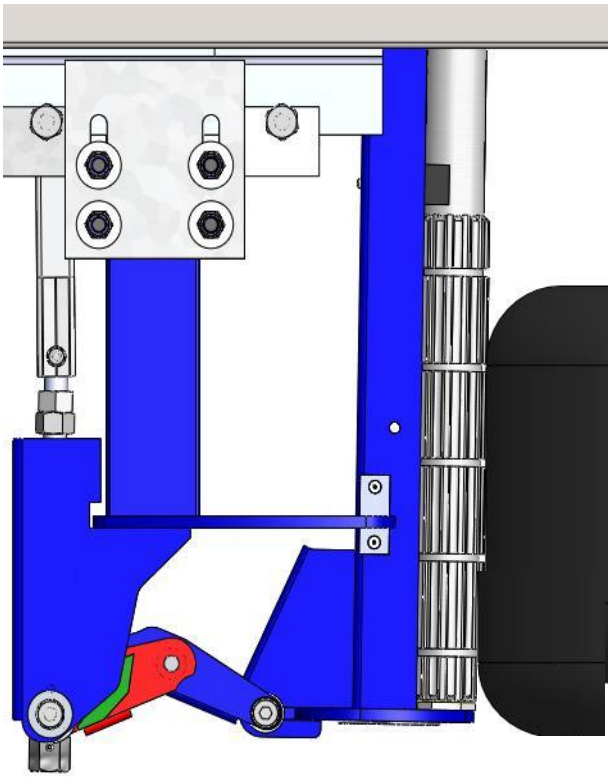


Diagram “F”

Green tag shows correct engagement

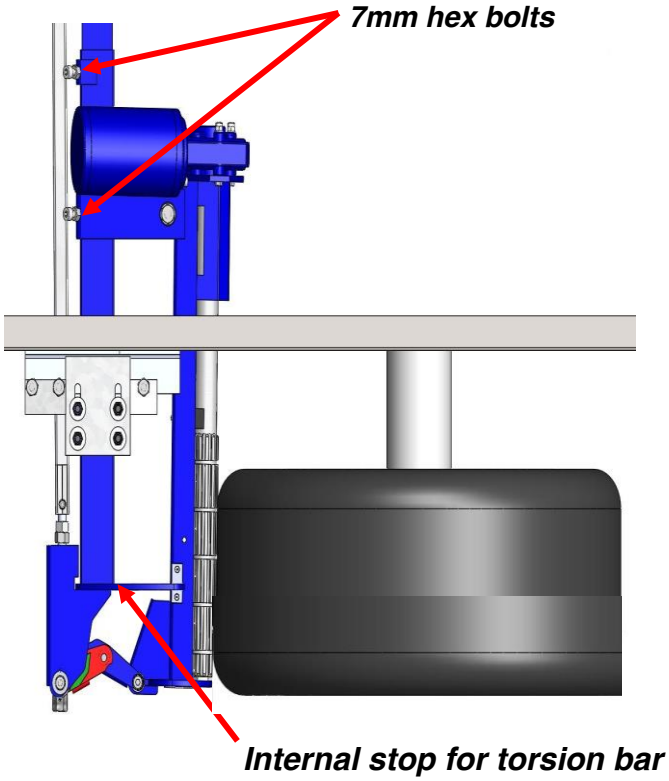



Diagram “G”

Another angle for engagement

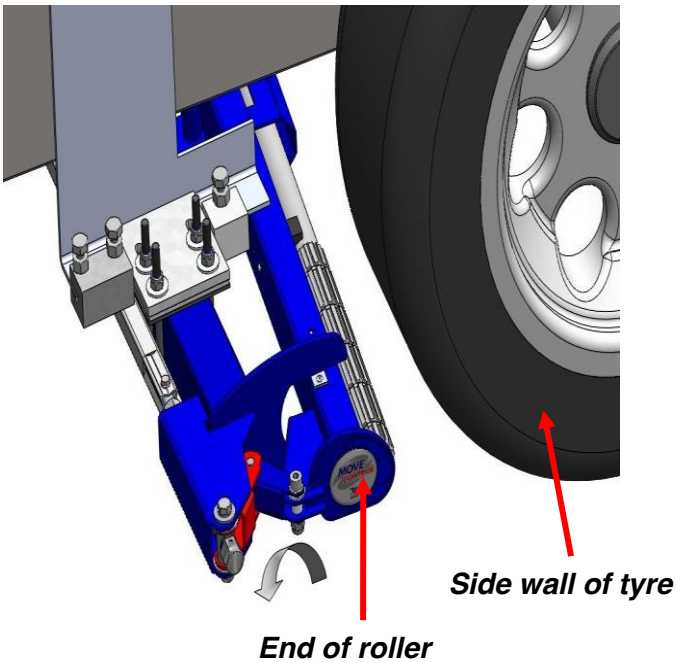



Diagram “H”

Fully wound back position
“No green tab visible”

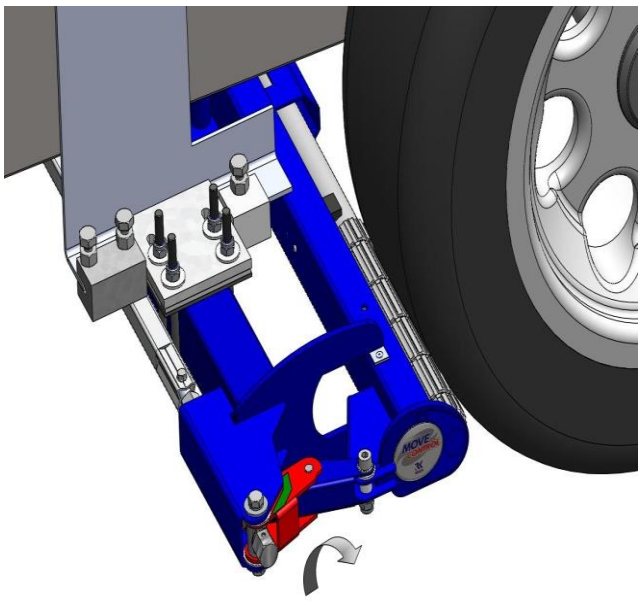


Diagram “I”

In a fully engaged position

# Cross Actuation Assembly of ECO Mover to Caravan

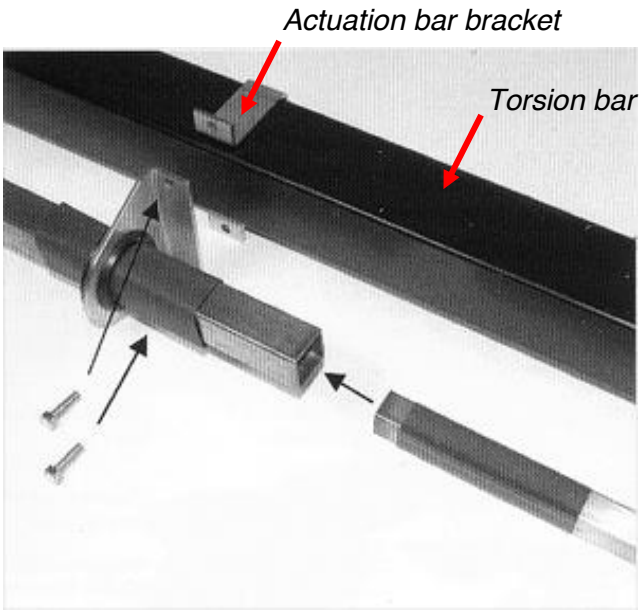



**Diagram "J"**

**Cross actuation center assembly**

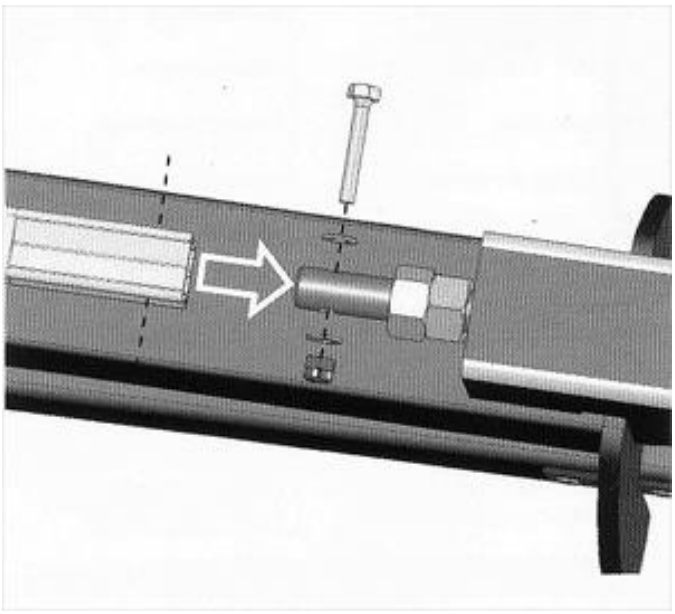


**Diagram "K"**

**Bolting cross actuation bar to mover roller assembly**

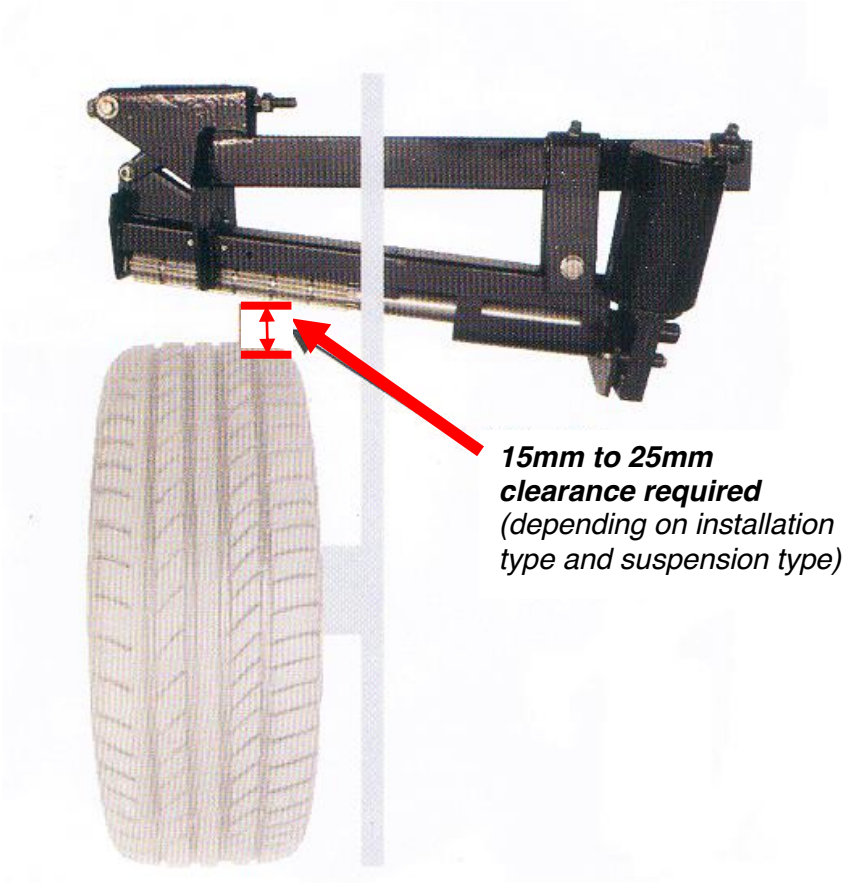



**Diagram "L"**

**Showing clearance required between roller assembly and tyre**

*(Please note kit includes only 15mm spacers, for all other spacing's please use measuring tape)*

# Installation – Electrical System

Make sure that the 12V supply from the battery and the 240V electricity supply is disconected.

Make sure that the battery size for a single axle mover is a minimum of 75AH and 110AH for the Twin 4WD Mover.

Establish a suitable place for the fitting of the Base Station, normally close to where the battery is located. It must be within **1 metre**. If the caravan is a Twin 4WD installation, the master Base Station and the slave Base Station need to be close to each other. Ensure that the units antenna are not obstructed.

Fix the Base Station with 4 screws either on the wall or onto the floor.

Next fit the master isolation switch near the Base Station if it is a pop-top or full caravan. Other caravans will need to have the isolation switch fitted to the outside e.g. Camper trailer, but still within reach of the battery. Make sure that the main fuse is at the battery positive terminal end.

Drill 2 – 10mm holes through the floor as close as possible near the Base Stations, making sure not to damage gas lines, water hoses , electrical wires and chassis brackets. These holes are for the wiring from the mover motors to the Base Stations.

Use the appropiate diagram for the type of installation you are doing. Diagrams are attached. Study these diagrams carefully as the wiring is critical for smooth operation of your system.
**Caution: If you connect the wires to wrong terminals, you will damage the Mover, so please pay particular attention to the wiring diagram.**

As the mover is a 12V system, it is important to make sure that all **motors to base station wires** are the same length , so always do the longest wire first then the off cut will give you the future length of all other wires. It is very important to do this as the voltage drop will make your caravan behave irregular.

Secure all wires to motors with plastic cable ties supplied and secure wiring under the floor with brackets provided as well as cable ties. Put silicon sealant around wires going through floor.

Obtain the remote hand control and insert the 2 AA batteries. Check next to make sure that the rollers are not engaged and remove any 15mm blocks that maybe still between rollers and tyres.

Finally, before putting the covers on the Base Station turn on the isolation switch and test run the mover before engaging the rollers onto the tyres. Check to make sure that the rollers are moving in the right direction.
For the Twin 4WD mover, make sure that the cable between the Master Base Station and the Slave Base Station is fitted, before testing.

Should the hand control not make the mover operate, it maybe necessary for you to synchronise the hand control with the Base Station. (See special page for this procedure)

If your caravan towball weight is over 80Kg and you have a standard jockey wheel, it is recomended to purchase the special twin wheel jockey wheel. It would make moving your caravan easier on most surfaces.

If everything is working fine, engage the rollers to the tyres and after this take off the hand brake. Now test your installation and make sure it performs to expactions, by keeping within an 8 metre radio range.
When satisfied, put on the caravan handbrake and disengage the mover rollers from the tyres. Turn off the master isolation switch and you are now ready to travel.

**Note: Rollers must not be engaged to tyres when travelling as this will cause damage to the mover.**

# Single Caravan Mover fitted to front of tyres

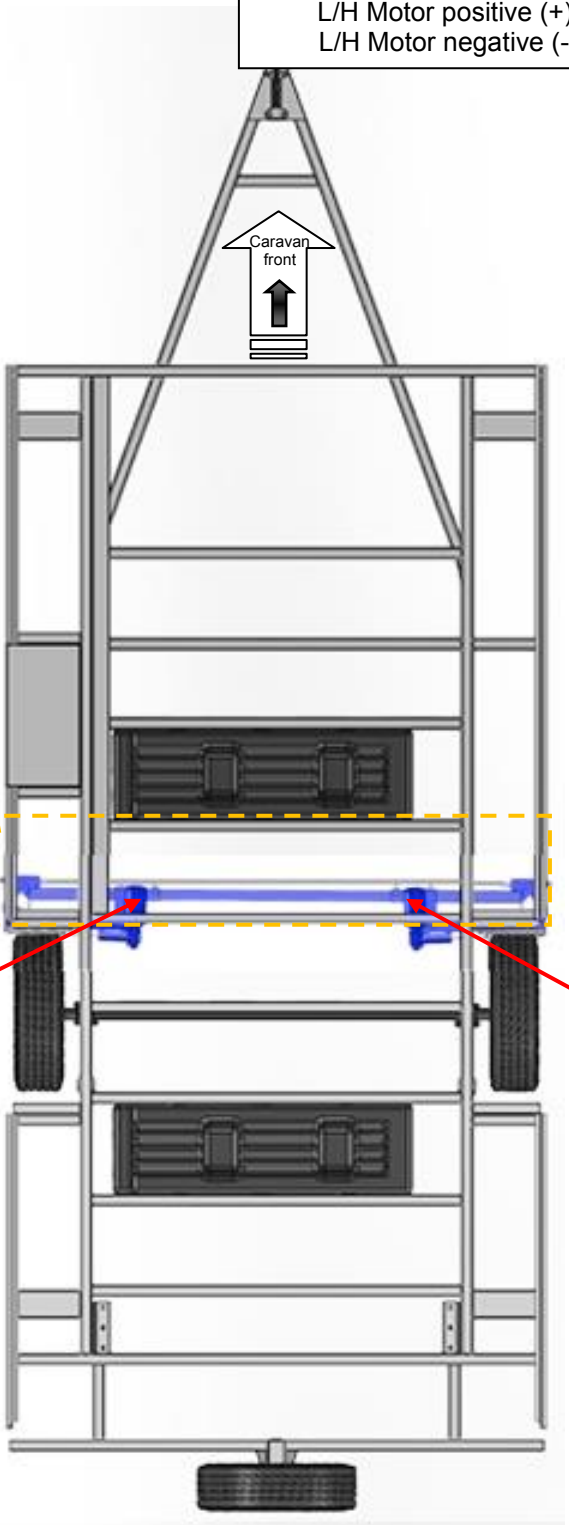
**Electrical Schedule** – for wiring motors to the base stations

**Front of Axle Motors**

R/H Motor positive (+) cable to Base Station R+
R/H Motor negative (-) cable to Base Station R-
L/H Motor positive (+) cable to Base Station L+
L/H Motor negative (-) cable to Base Station L-

**Diagram "M"**

*Ensure there is a minimum **350mm clearance** (from tyres to any other obstacle that may limit your workspace) across the width of the chassis*




*Left Hand Motor (L/H)*

*Right Hand Motor (R/H)*

*Please note: All cables from motors to base station must be of equal length*

# Single Caravan Mover Fitted to Rear of Tyres

**Electrical Schedule** – for wiring motors to the base station

**Rear of Axle Motors**

R/H Motor positive (+) cable to Base Station R-
R/H Motor negative (-) cable to Base Station R+
L/H Motor positive (+) cable to Base Station L-
L/H Motor negative (-) cable to Base Station L+

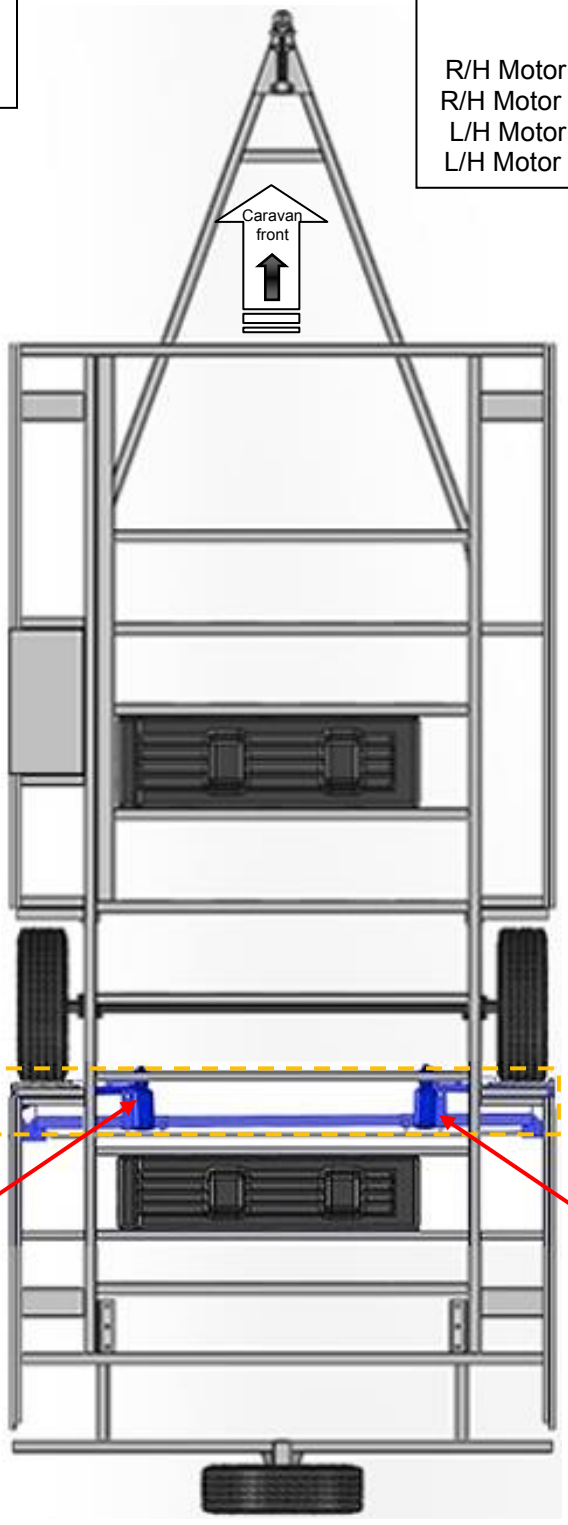



**Diagram "N"**

*Ensure there is a minimum **350mm clearance** (from tyres to any other obstacle that may limit your workspace) across the width of the chassis*

*Left Hand Motor (L/H)*

*Right Hand Motor (R/H)*

*Please note: All cables from motors to base station must be of equal length*

# Overhead View Twin 4WD

**Front of Axle Motors**

R/H Motor positive (+) cable to Base Station “Master” R+
R/H Motor negative (-) cable to Base Station “Master” R-
L/H Motor positive (+) cable to Base Station “Master” L+
L/H Motor negative (-) cable to Base Station “Master” L-

**Rear of Axle Motors**

R/H Motor positive (+) cable to Base Station “Slave” R-
R/H Motor negative (-) cable to Base Station “Slave” R+
L/H Motor positive (+) cable to Base Station “Slave” L-
L/H Motor negative (-) cable to Base Station “Slave” L+

*Ensure there is a minimum **350mm clearance** (from tyres ro any other obstacle that may limit your workspace) across the width of the chassis*

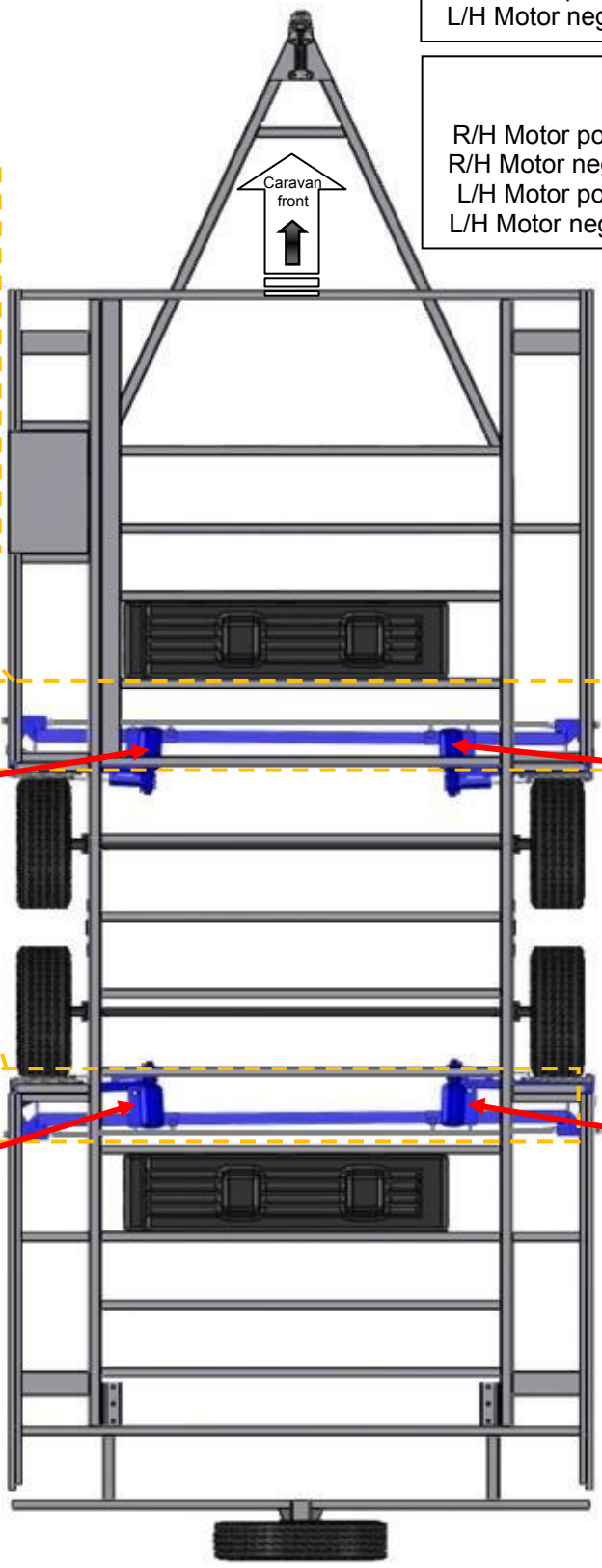



**Diagram “O”**

*Left Hand Motor (L/H) - Front*

*Right Hand Motor (R/H) - Front*

*Left Hand Motor (L/H) - Rear*

*Right Hand Motor (R/H) - Rear*

*Please note: All cables from motors to base station must be of equal length*

# Electrical Layout for 'In Front' of Wheels Installation

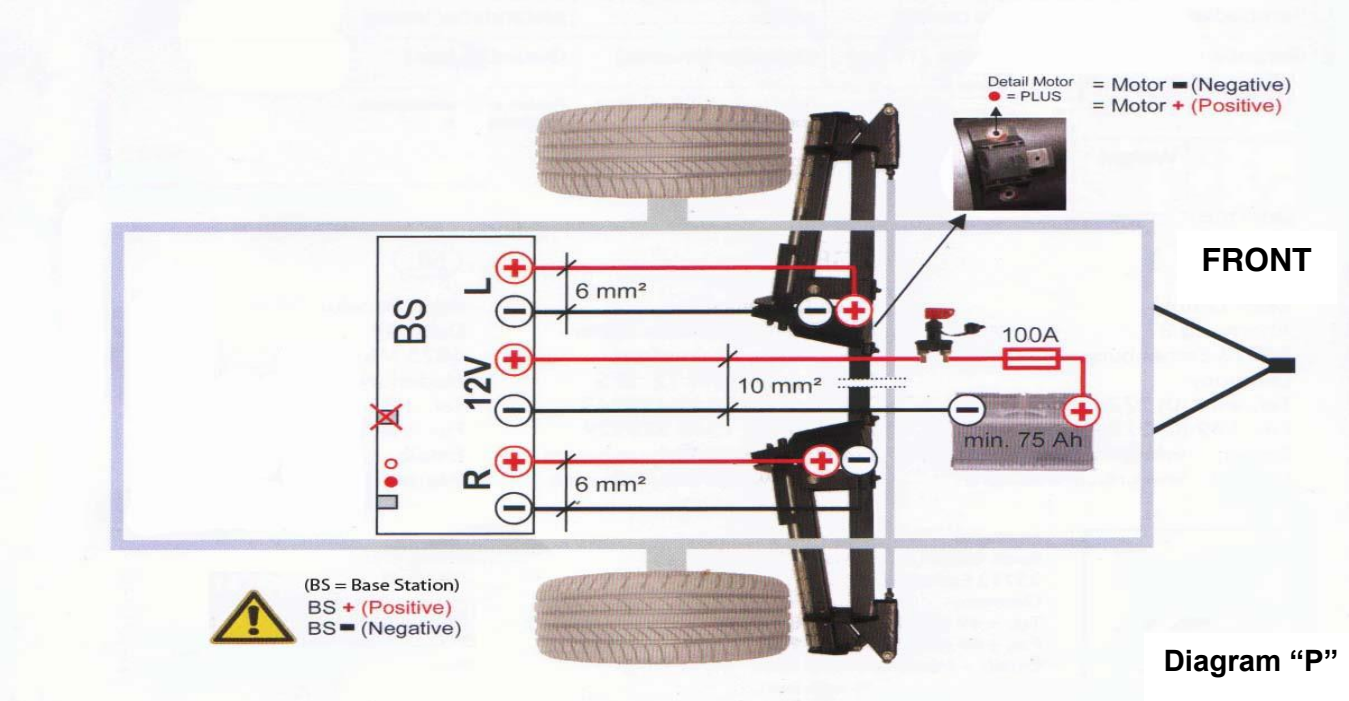



**Diagram "P"**

**Important information:**

- 10 mm$^2$ red cable supplied must be used from the battery to the 100amp fuse and then to the isolation switch as well as to the Base Station.
- 10 mm$^2$ black cable supplied must be used from battery to the Base Station.
- 6 mm$^2$ cables supplied must be used from the motors to the Base Station.
- **Ensure that all 6 mm$^2$ cables are the same length from the motors to the Base Station terminals.**
- Ensure that the Base station is installed within 1 metre of the battery and the isolation switch is within this range also.
- Avoid any cable loops.
- Ensure that the Base Station antenna is free and doesn't touch anything.
- **Ensure that the plastic cable ties are used to secure the cables to the motors.**
- Secure cables to underside of floor with supplied cable clamps at regular intervals and avoid running cables over sharp framing.
- Secure motor cable ends securely at the Base Station as per diagram above; do not over tighten the 10mm nuts on the circuit boards as that will damage the circuit board.
- Place sticker of the above electrical layout to the outside cover of the Base Station.
- All crimping of wires must meet Australian standards, as improper crimping will cause malfunctions such as, voltage drops, sparking, overheating of connections and possible fire.

# Electrical Layout for ‘Behind’ Wheels Installation

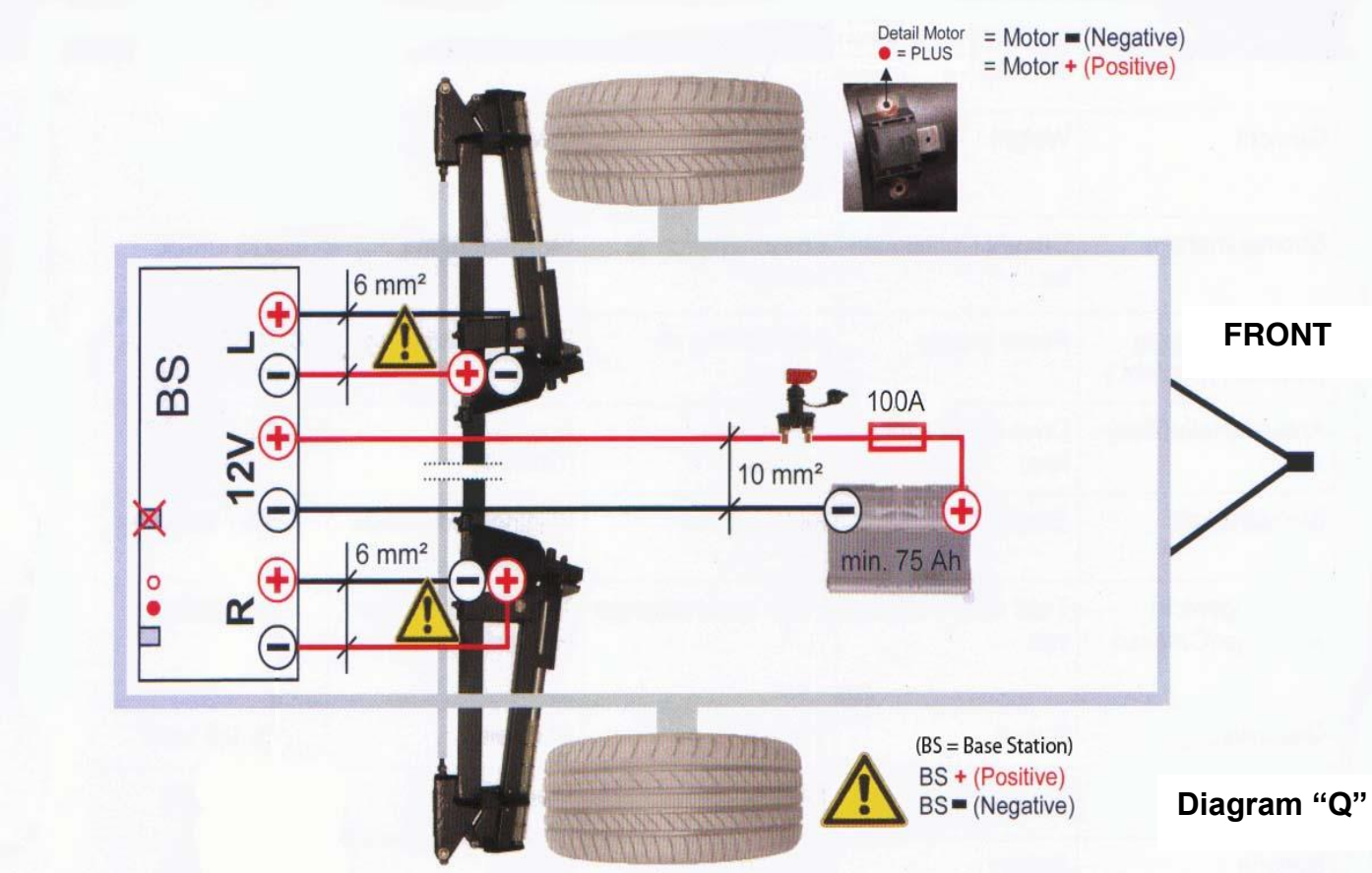



**Diagram “Q”**

**Important information:**

- **Please pay particular attention to the fitting of the positive cables to the negative terminals and the negative cables to the positive terminals from the motors to the Base Station.** This is done so the motors run in the right direction.
- 10 mm$^2$ red cable supplied must be used from the battery to the 100Amp fuse and then to the isolation switch as well as to the Base Station.
- 10 mm$^2$ black cable supplied must be used from battery to the Base Station.
- 6 mm$^2$ cables supplied must be used from the motors to the Base Station.
- **Ensure that all 6 mm$^2$ cables are the same length from the motors to the Base Station terminals.**
- Ensure that the Base station is installed within 1 metre of the battery and the isolation switch is within this range also.
- Avoid any cable loops.
- Ensure that the Base Station antenna is free and doesn’t touch anything.
- **Ensure that the plastic cable ties are used to secure the cables on the motors.**
- Secure cables to underside of floor with supplied cable clamps at regular intervals and avoid running cables over sharp framing.
- Secure motor cable ends securely at the Base Station as per diagram above; do not over tighten the 10mm nuts on the circuit boards as this will cause damage to the circuit board.
- Place sticker of the above electrical layout to the outside cover of the Base Station.
- All crimping of wires must meet Australian standards, as improper crimping will cause malfunctions such as, voltage drops, sparking, overheating of connections and possible fire.

# Electrical Layout for the ECO Twin 4WD Mover

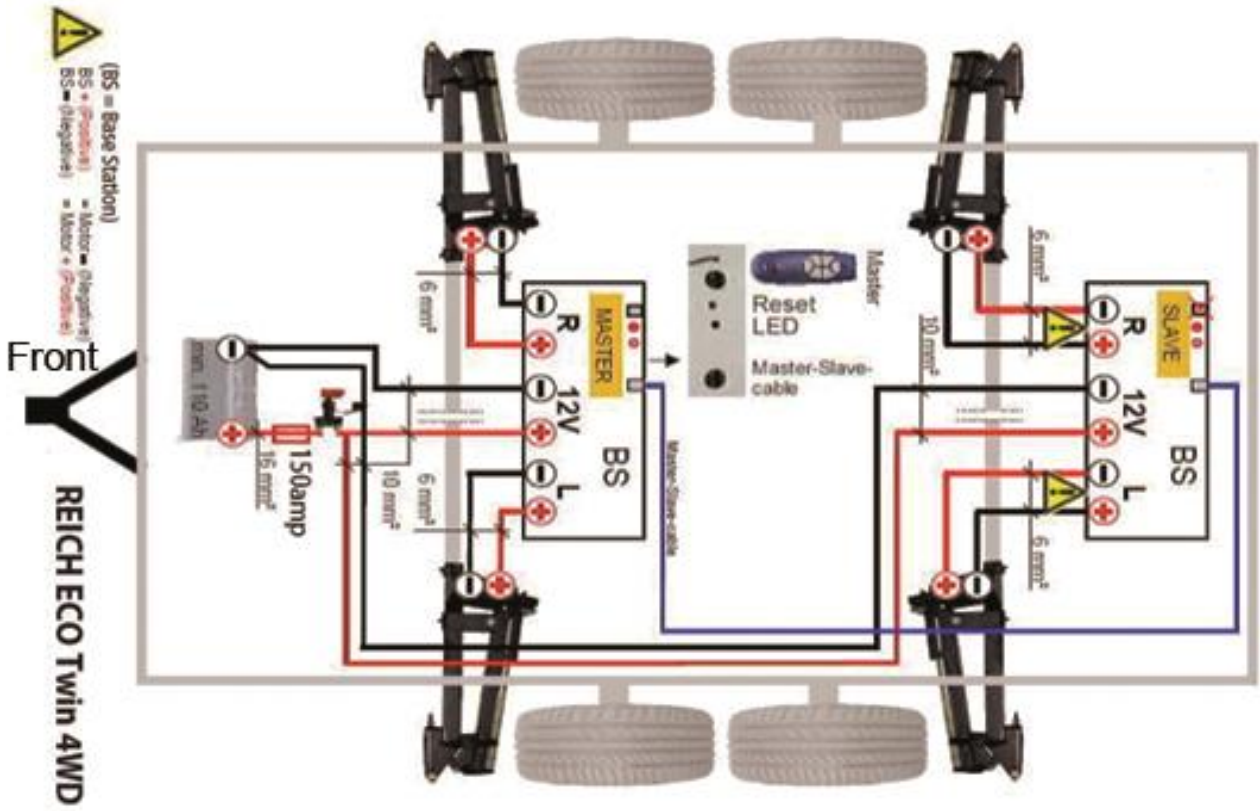



**Diagram "R"**

. **Important information:**

- **Please pay particular attention to the fitting of the positive cables to the negative terminals and the negative cables to the positive terminals from the motors to the Slave Base Station only.** This is done so the rear motors run in the right direction. **(It is not a misprint)**
- 16 mm$^2$ red cable supplied with inline 150Amp fuse must be used from the positive side of the battery to the isolation switch.
- 10 mm$^2$ red positive cables must be used from the isolation switch to the Master and Slave Base stations' positive 12V terminals.
- 10 mm$^2$ black negative cables supplied must be used from the negative side of the battery to the negative terminals of the Master and Slave Base stations.
- 6 mm$^2$ cables supplied must be used from the motors to the Master and Slave Base Station.
- **Ensure that all 6 mm$^2$ cables are the same length from the motors to the Master/Slave Base Stations terminals.** ***Keep wires in pairs and separate.***
- Ensure that the Base Station Master and Slave is installed within 1 metre of the battery and the isolation switch is within this range also.
- Avoid any cable loops.
- Ensure that the Base Station antenna is free and doesn't touch anything.
- **Ensure that the plastic cable ties are used to secure the cables on the motors.**
- Secure cables to underside of floor with supplied cable clamps at regular intervals and avoid running cables over sharp framing.
- Secure motor cable ends securely at the Base Station (as per diagram above) do not over tighten the 10mm nuts on the circuit boards as that will cause damage to the circuit boards.
- Place stickers of above electrical diagram to outside covers of master and slave Base Station.
- All crimping of wires must meet Australian Standards, as improper crimping will cause malfunctions such as, voltage drops, sparking, overheating of connections and possible fire.

## Synchronization Procedure for Remote Control

1. Turn the main master key on.
2. If the remote handset is activated, switch it off.
3. Push the reset button on the Base Station and hold it pushed down.
4. At the same time double press the ON button on the handset.
5. The red LED at the base station will light up.
6. Press the ON button once on the handset while the LED is on and then release the reset button on the Base Station.
7. The synchronization is now completed.

*Please note: Ensure that the 2 - AA batteries in the handset are OK, if light in handset is dull, replace with fresh AA batteries.*

## Maintenance

Once a year please have your Reich ECO Mover maintained and visually inspected as described below:

- Cleaning of the complete moving drive.
- Application of suitable lubricant to all movable joints (e.g. silicon spray)
- Check the distance between the rollers and the tyres as well as check the tyre pressure, as per manufacturer recommendations.
- Visual damage inspection of the cables and electrical connections.
- Battery voltage check.

### Also:

From time to time check if the moving drive is free of dirt, sand or small rocks and branches.

# Troubleshooting

If your Reich ECO caravan mover isn't working the way it should, firstly refer to your instruction manual. Should the problem still be there, proceed with the following:

1. 85% of problems are battery related, so please check that your battery is over 12V. If this is not the case, put the battery on charge and use it when fully charged as per guidelines in the instruction manual.
2. Should the mover stop working, turn the master switch off and then on again. The mover should operate normally again, if it does it again it means that an overload has occurred and you are operating the mover at its limits.
   The Reich ECO Caravan mover is equipped with an electric overload protection and automatically switches off in case of overload.
3. If you are operating the mover within the correct limit and the problem of stopping occurs, check all connections of the cabling.
4. Check the connections at the motors. Make sure that the wires are on the terminals and the plastic ties, that hold the wires, are firmly in place.
5. Do the rollers spin freely when disengaged?
6. Is the ECO mover fitted in front or behind the wheels? Is the wiring to the Base Station, correct, as per the instruction for either front or back installation options?
7. To test voltage drop, turn the ECO mover on whilst disengaged from the wheels. If it works correctly, then there is voltage drop and it becomes a battery issue. The battery needs to be charged up.
8. If one motor only works and the other does not, check the wiring on the Base Station. Try connecting the non-working motor to working terminals on the Base Station and if it works you may have a faulty Base Station board. If the motor doesn't work, after swapping the terminals, you have a faulty motor.
9. Noisy or clicking Motor? Lubricate and put grease on the pressure bearing blocks. Also spray some WD40 on the other bearing points if the mover hasn't been worked for a while.
10. If the Base Station randomly cuts in and out, check the wires that are coming to and from the isolator switch and all connections to the battery.

*If problems persist contact your installer or contact Coast to Coast RV Services.*

NOTE: Please ensure that you have all the correct documentation at the time of call, e.g. proof of purchase, chassis number, brand of caravan, selling dealer.

****Please Note: Rollers must not be engaged when performing the above tests.****

Please Note: All crimping of wires must meet Australian standards, as improper crimping will cause malfunctions such as, voltage drops, sparking, overheating of connections and possible fire.

## SPECIFICATIONS

### ECO MOVER—Single

450-04540—with 2m stabilizer bar (2 year guarantee)

For single-axle caravans with cross actuation kit.

DELIVERY: Standard mounting set—suitable for most chassis types. Can be fitted in front or behind the wheels. Long life friction rollers, two motors, control unit with all cable connections, remote control, documentation, storage case for handset, extension hand control cable and instruction manual.

### ECO MOVER—Twin

450-04550—with 2m stabilizer bar (2 year guarantee)

For twin-axle caravans with cross actuation kit.

DELIVERY: Standard mounting set—suitable for most chassis types. Long life friction rollers, four motors, two control units with all cable connections, remote control, documentation, storage case for handset, extension hand control and instruction manual.

## PRODUCT INFORMATION

| TYPE | ECO MOVER—Single | ECO MOVER—Twin |
|---|---|---|
| Weight | 33kg | 66kg |
| Current Consumption | 15 A—max. 60A | 25 A—max. 90A |
| Power Supply (optional) | 12 V Battery, 75 Ah min. | 12 V Battery, 110 Ah min. |
| Drive | Two 12 V DC electric motors, driving friction rollers | Four 12 V DC electric motors, driving friction rollers |
| Gradient | 25%, based on a caravan weight of 1,200kg | 15%, based on a caravan weight of 2,000kg |
| Total Weight Caravan | Up to 2,000kg | Up to 3,000kg |
| Speed | approx. 1km/hr | |

**(MODIFICATIONS AND ERRORS EXCEPTED)**

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DEALER / SUPPLIER